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TI Integrated microchip lasers having regulatory function of frequency

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DT Patent

LA Chinese

IC ICM H01S003-16

ICS H01S003-10

CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 75

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PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI CN 1298217	A	20010606	CN 1999-125311	19991130
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PRAI CN 1999-125311		19991130		
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AB The integrated microchip laser is manufactured by determining the frequency-doubling or frequency-mixing phase-matched direction of non-linear optical crystal substrate, growing laser crystal microchip on the end face vertical to the phase-matched direction, and coating medium membrane. The substrate is $GdxY1-xAl3(BO3)4$, $Ca4GdxY1-xO(BO3)3$, $Gd2xY2(1-x)(MoO4)3$, or $LaSc3(BO3)4$ ($x = 0-1$). The crystal microchip was formed by part or complete replacement of $Gd3+$, $Y3+$, or $La3+$ with $Nd3+$, $Er3+$, $Pr3+$, or $Yb3+$, etc. The substrate may also be $LiNbO3$, and its laser crystal microchip is $RE3+:MgO:LiNbO3$ or $RE3+:ZnO:LiNbO3$ ($RE = Nd, Er, Pr, Yb$, or other rare earth ion). One passive Q-regulatory crystal microchip may be formed by doping $Cr4+$ before formation of laser crystal microchip.

ST integrated microchip laser manuf; nonlinear optical crystal

IT Nonlinear optical materials

Solid state lasers

(integrated microchip lasers having regulatory function of frequency)

IT Rare earth metals, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(ions; integrated microchip lasers having regulatory function of frequency)

IT 14913-52-1, Neodymium ion ($Nd3+$), uses 15723-28-1, Chromium ion ($Cr4+$),

uses 18472-30-5, Erbium ion ($Er3+$), uses 18923-27-8, Ytterbium ion

($Yb3+$), uses 22541-14-6, Praseodymium ion ($Pr3+$), uses

RL: TEM (Technical or engineered material use); USES (Uses)

(integrated microchip lasers having regulatory function of frequency)

IT 12031-63-9, Lithium niobium oxide ($LiNbO3$) 13813-76-8

130773-05-6

RL: DEV (Device component use); USES (Uses)

(substrate; integrated microchip lasers having regulatory function of frequency)